

**REMARKS**

Claims 1-13 and 14-19 are now in the application. By this Amendment, claims 1-3, 5-7 and 11 have been amended. Support for the amendments to claims 1-3 is found at least at page 7, lines 1-10, of the specification. Claims 5-7 and 11 have been amended to correct informalities and not to limit the claim scope. No new matter has been added.

Claim 2 has been objected to because it contains a period after the feature “catalyst bed.”  
Claim 2 has been amended as suggested in the Office Action.

Claims 6 and 17 have been rejected under 35 U.S.C. §112, second paragraph, because the claim feature “wherein the-used” is allegedly unclear. As recognized by the Office Action, original claim 6 recited the feature “wherein the catalyst used.” Applicants respectfully submit that the claim feature “catalyst” was accidentally omitted in the preliminary Amendment filed on October 12, 2007 and is hereby restored, as suggested in the Office Action. Claim 17 is rejected merely for its dependency on claim 6.

Claims 1, 10, 11, 15 and 16 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Mueller (US 4,564,671) in view of Funk et al. (US 6,036,845). Claims 2-9 and 17-19 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Mueller in view of Funk and further in view of Tonsil Optimum FF data sheets (Süd-Chemie AG, Munich, 2007).  
Claims 12 and 13 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Mueller (US 4,564,671) in view of Müller (US 5,886,138).

Claim 1 recites, among other features, a fluidized bed. As acknowledged in the Office Action, Mueller suggests a fixed-bed reactor and cannot reasonably be considered to have suggested the combination of all of the features of independent claim 1. The Office Action relies on Funk for allegedly curing the deficiencies of Mueller. The analysis in the Office Action fails for at least the following reasons.

Claim 1 is amended to recite “wherein the fluidized bed is operated at the fluidizing point with the expansion factor of the catalyst bed being less than or equal to 1.15 or wherein the

fluidized bed is operated as an expanded fluidized bed with the expansion factor of the catalyst bed being from 1.01 to 4.” These features were originally recited in dependent claims 2 and 3. The Office Action asserts that “the claimed effects and physical properties would implicitly be achieved by carrying out the disclosed process.” However, inherency requires that the recited result or structure must necessarily be obtained not merely that it might be achieved. See *Electra Medical Systems S.A. v. Cooper Life Sciences, Inc.*, 32 USPQ2d 1017 (Fed. Cir. 1994); *In re Oelrich*, 212 USPQ 323 (CCPA 1981) and *In re Robertson*, 49 USPQ2d 1949 (Fed. Cir. 1999).

Further, as set forth in MPEP §2112 (IV), “[i]n relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art.” *Ex parte Levy*, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990) (emphasis in original). This burden has not been met in the Office Action. As set forth above, Mueller suggests a fixed-bed catalyst. Accordingly, the above-quoted features of claim 1 cannot reasonably be considered to flow from Mueller because Mueller suggests that the catalyst material remains stationary in the reactor.

Further, the application of Funk likewise would not result in a suggestion of the above-quoted features. Funk suggests a catalytic reforming process for reforming paraffinic and naphthenic hydrocarbons. As indicated at col. 8, line 52 to col. 9, line 59, the reactants and products are in the vapor phase. As such, Funk is concerned with small molecules having a comparably low viscosity and with a reforming reaction in which the viscosity of the vapor stream changes insignificantly, if at all. Mueller, on the other hand, suggests a polymerization reaction for the production of polymers wherein the viscosity increases throughout the process. In a fixed-bed reactor, a concentration gradient builds up between the inlet and the outlet. Because the catalyst material is stationary in the process suggested by Mueller, this citation does not provide a suggestion for performing a polymerization with a fluidized bed catalyst. However, incorporating the fluidized-bed catalyst of Funk in the fixed-bed catalyst of Mueller would result in catalyst particles that are either not fluidized or are carried out of the reactor unless the change of viscosity in the reaction mixture is taken into account. Funk cannot reasonably be considered

to have suggested how to perform the polymerization reaction of Mueller with a fluidized bed catalyst because the reformation reaction suggested in Funk takes place with no or only small changes in the viscosity of reactants and products in the vapor phase. Thus, the above-quoted feature cannot reasonably be considered to necessarily flow from the combination of Mueller and Funk.

Applicants respectfully submit that in the embodiments according to a fluidized bed and an expanded fluidized bed recited in claim 1, the reaction mixture becomes uniformly distributed. In both embodiments, the fluidization is carried out such that no significant amount of catalyst is discharged from the polymerization reactor. As set forth in the specification on page 6, lines 1-7, the optimal flow rate, expressed, for example, by the superficial velocity, has to be adapted to the fluidized bed or to the expanded fluidized bed at the fluidizing point. The optimal flow rate depends on the viscosity and density of the reaction medium and also on the properties of the catalyst particles, in particular their size, shape, density and porosity. The specification clearly enables a skilled artisan to determine the optimal parameters, for example, at page 6, lines 24 to 31.

U.S. Patent No. 5,886,138 to Müller and Tonsil Optimum FF data sheets have not been applied in a manner to cure the deficiencies of Mueller and Funk. Tonsil Optimum FF data sheets has merely been applied for allegedly disclosing a porosity of between 0.23 and 032 cm<sup>3</sup>/g. The '138 patent to Müller has merely been applied for a suggestion of using acetic anhydride.

In view of the above, consideration and allowance are, therefore, respectfully solicited.

In the event that the Examiner believes an interview might serve to advance the prosecution of this application in any way, the undersigned attorney is available at the telephone number noted below.

Application No. 10/540,510  
Amendment dated April 11, 2008  
Reply to Office Action of January 11, 2008

Docket No: 13156-00013-US

Applicant believes no fee is due with this response. However, if a fee is due, please charge our Deposit Account No. 03-2775, under Order No. 13156-00013-US from which the undersigned is authorized to draw.

Dated: April 11, 2008

Respectfully submitted,

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